THE UHLE POTTERY COLLECTIONS FROM ICA

BY

A. L. KROEBER AND WILLIAM DUNCAN STRONG

WITH THREE APPENDICES

BY

MAX UHLE

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INTRODUCTION

In a previous study[1] we have described and discussed the collections made for the University of California by Dr. Max Uhle at Chincha on the coast of southern Peru. The present paper is a record and interpretation of the discoveries of pottery made by him in the vicinity of Ica or Yca, the second coastal valley south of that of Chincha. The Ica collection is three times as large as the Chincha one. There are some 1300 entries in the original field catalogue,[2] aggregating about 2000 separate specimens, including 600 pottery vessels, besides some lots of sherds. The collection is also more important in variety and range. At Chincha we recognized three types of pottery and in part of other artifacts—Inca, Late Chincha II, Late Chincha I; besides a few scant indications of a much more ancient or Proto-Chincha period. The Ica collection shows seven pottery styles, each established by a considerable number of vessels taken from particular sites or graves. In no case do the contents of one grave include objects of more than one style.[3] The seven styles therefore represent more or less successive culture phases. They are, in our terminology, and in probable order backward from the most recent: Inca; Late Ica II; Late Ica I (these three phases correspond closely with the three determined at Chincha); Middle Ica II; Middle Ica I; Early Ica, or to use Dr. Uhle's term, Epigonal, the appropriateness of which will be discussed later; and Nazca, or Proto-Nazca, as it has become customary to designate a very striking ware. The Late and Middle Ica subdivisions into II and I represent somewhat less marked differences of phase than the other groupings. But they were made imperative by a detailed objective classification of the specimens and then proved to conform so neatly with the provenience of pieces according to cemetery and grave, as well as with passing comments scattered through Dr. Uhle's field catalogue, that we feel no hesitation in going beyond his pioneer recognition of five periods by subdividing two of them. Each of the seven phases shows approximation of style to two

[1] This series, XXI, 00–00, 1924. See also the following paper, Explorations at Chincha, by Max Uhle, pp. 00–00.

[2] Nos. 4–4205 to 4–5520.

[3] A number of graves, and small sites like G and Y, yielding few vessels of indistinctive type, have not been assigned to styles and their contents have been excluded from the tabulations and formulations given below.

others.[4] They must therefore be construed as parts of a continuous development. In the absence of stratification, this continuity is of course of importance.

The method has been the same as that followed in the Chincha study; namely, to classify and infer solely on the basis of the specimens themselves and the documentary data relating to their excavation—their provenience and association as given in Dr. Uhle's field catalogue and his accompanying reports, letters, and plans. The interpretations made by him in the field were disregarded until our own were formulated; not out of disrespect for his opinion, but because the aim was to attain conclusions definitely enough attested by evidence to put them beyond the reach of being designable as opinion. It is thoroughly gratifying that when the conclusions are matched against Dr. Uhle's as expressed in parts of his reports from the field to the University, and subsequently in various publications,[5] they conform in essentials.[6]

We take this occasion to express our conviction of the fundamental importance of Dr. Uhle's work on the development of native culture in the Andean region. He was the first student to see a definite scientific problem in the chaos of fact presented by Peruvian antiquities—the problem of the historical development of their culture; and he has at least blocked out the main outlines of an interpretation which, so far as we have checked it against the data, seems both penetrating and valid. Before his studies, there had been some wavering discrimination between Inca and pre-Inca or Tiahuanaco, but

[4] The resemblances are least marked between Proto-Nazca, Epigonal, and Middle Ica I, but are never wholly lacking.

[5] Uhle, Bericht über die Ergebnisse meiner südamerikanischen Reisen; *and* Aus meinem Bericht über die Ergebnisse meiner Reise nach Südamerika 1899–1901, *in* Intern. Congress Americanists, XIV, Stuttgart, 1904, 567–579 and 581–592, 1906; Zur Chronologie der alten Culturen von Ica, Jour. Soc. Américanistes de Paris, n.s. X, 341–367, 1913; The Nazca Pottery of Ancient Peru, Proc. Davenport Acad. Sciences, XIII, 1–16, 1914.

[6] The chief interpretative difference is in regard to the 'Epigonal' period. This term was coined twenty or more years ago by Dr. Uhle, and has been used by him since, to designate certain phases of culture, widely spread in Peru, regarded by him as 'epigonal' or succeeding upon and derived from the phase of culture exemplified by the monuments of Tiahuanaco. As to this relation, the present authors are not ready to commit themselves. They find the characteristic design forms of Tiahuanaco as definitely represented in Middle Ica I and II pottery as in the apparently earlier Epigonal pottery from Ica. This suggests that the 'Epigonal' style may possibly be pre-Tiahuanaco rather than decadent from Tiahuanaco. The answer to this possibility involves the relative placing in time not only of the Tiahuanaco monuments themselves, but of the potteries of the Tiahuanaco and the 'Epigonal' styles found at Trujillo, Ancon, Pachacamac, and elsewhere in Peru, which is beyond the scope of the present study. Dr. Uhle in his latest publications continues to make the Epigonal period of the coast several centuries later than the Tiahuanaco monuments: 650–900 A.D. as against 350–500 A.D. (Los Principios de las Antiguas Civilizaciones Peruanas, Bol. Soc. Ecuat. Estud. Hist. Am., IV, pp. 448–458, 1920).

nothing more. In the definite characterization of the Tiahuanaco type, Dr. Uhle had a large share. While others rested on that attainment, he pushed on, and at Pachacamac, at Trujillo, at Chincha and Ica and Nazca, at Ancon, in the valley of Lima, and elsewhere, accumulated evidence that allowed him to distinguish not only local types and local time sequences, but to correlate these into a broad scheme into which most of the known culture developments of the Andean area could be fitted. Concepts like Proto-Nazca and Proto-Chimu, which are beginning to be dealt with as current coin in the field of South American prehistory, owe their establishment and definition to him; and even those who remain most skeptical of a thoroughgoing unraveling of Andean civilization are gradually beginning to follow partially where he led the way. Certain peculiarities of presentation, perhaps, the non-publication of any monumental work since the volume on Pachacamac,[7] an absence of many years from Europe and North America, and lack of opportunity to prosecute larger systematic excavations, seem to have combined to prevent full recognition of the quite unique value and significance of Dr. Uhle's labors. To those who are still in doubt whether to look upon him as one of the leaders of authentic anthropological science or as a speculator who operates with confused or insufficient evidence, the following fact may be of interest. The authors have now worked over the fruits of two of Dr. Uhle's explorations, those at Chincha and at Ica. In both instances analysis of the data has forced upon them not only the acceptance of all the culture phases and periods announced by him, but the establishment of finer subdivisions. In other words, intensive, first-hand reëxamination of his evidence both corroborates and extends his conclusions.

LOCALITIES AND GRAVES

In the absence of detailed published maps of Ica valley, the sites of most of Dr. Uhle's excavating can be indicated only approximately, as per a sketch map filed by him (fig. 1). All the sites lie downstream from the city of Ica. Chulpaca (site M) is east of the river, five or six miles below Ica. Not much farther from Ica, but evidently farther from the river, is Pueblo Nuevo de Galagarza, or the Hacienda Galagarza near Pueblo Nuevo (sites X, Y, Z). On the road from Chulpaca to Tate, which latter appears to be about seven miles from Ica, Dr. Uhle

[7] Philadelphia, 1903.

discovered much valuable material at a spot (site T) of part of which he furnishes a sketch (fig. 2). Below Tate is Santiago, about eight miles from Ica. Opposite the town is site S. So far, all sites lie east of the stream. Considerably farther south or downstream than the foregoing, in a separate basin about twenty-five miles from Ica city,

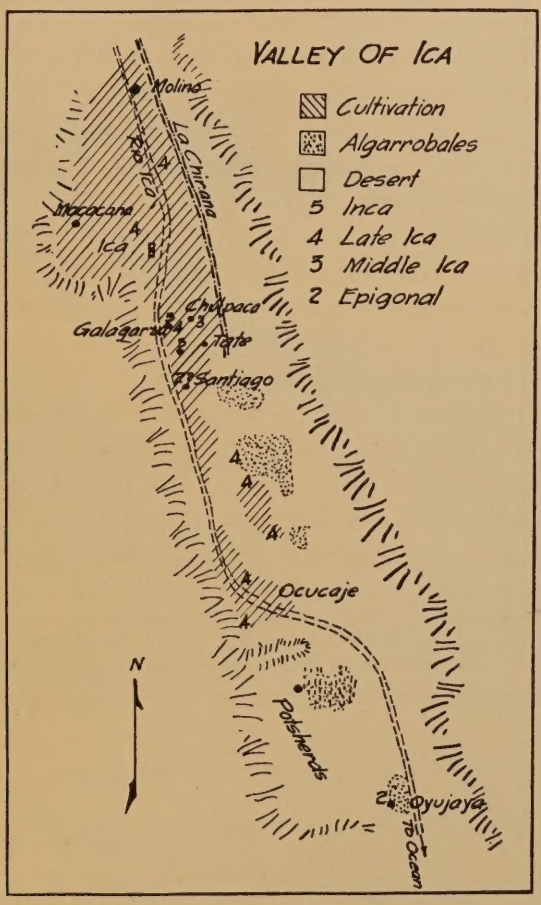

Fig. 1. Map of valley of Ica. By Max Uhle

is the Hacienda Ocucaje. Here Dr. Uhle excavated west of the river at a number of spots (sites A–H). The general topography of these is clear from a map in his field notes, here represented as figure 3. Scattering pieces or sherds were obtained by him also at Aguada de Palos and La Venta, upstream from Ocucaje; at Oyujaya, six leagues below Ocucaje; and at some sambaquis or shellmounds at the mouth of the river.

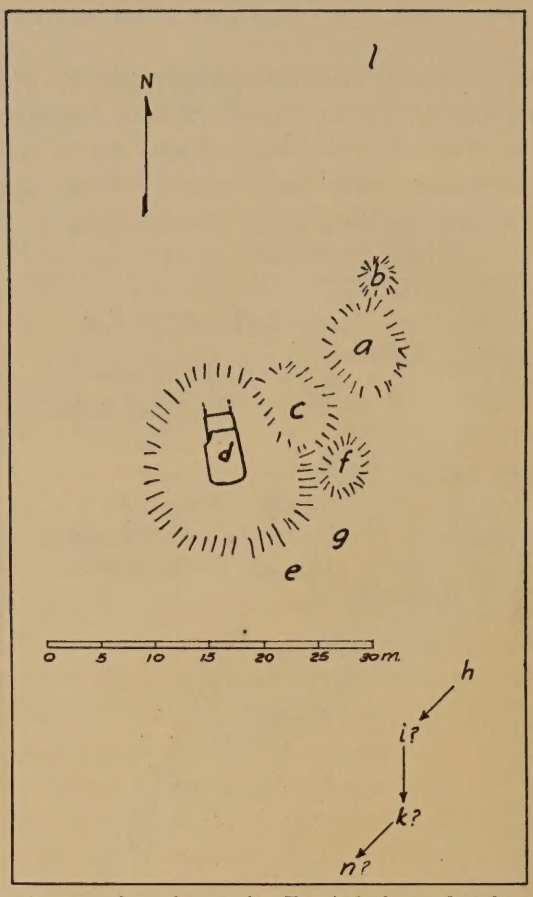

Fig. 2. Sketch map of tombs at site T. A–h from sketches by Max Uhle; i–n from notes by him, directions being certain but distances unmentioned.

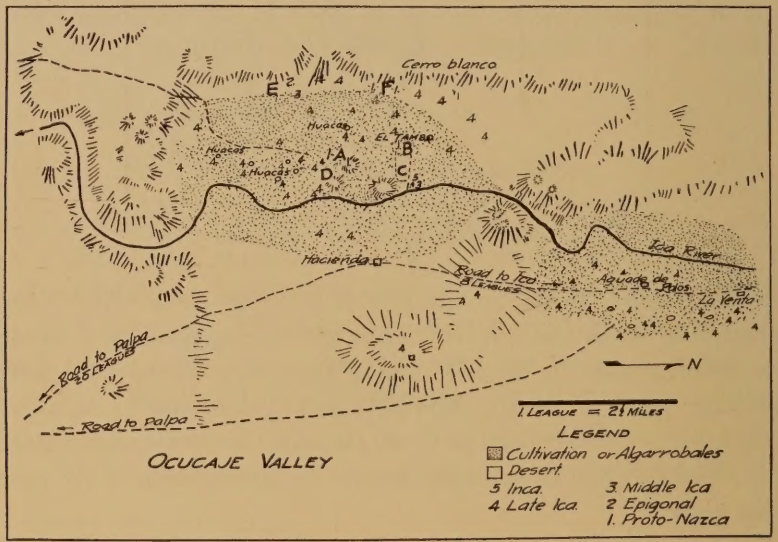

Fig. 3. Map of valley of Ocucaje, 8 leagues below Ica. By Max Uhle.

Further data as to localities will be found in Appendix A, extracted from Dr. Uhle's field reports; and as to cemeteries and interments, in Appendix B, extracted from his field specimen catalogue. The following list condenses the information on sites, graves, specimens, and period.

LIST OF SITES AND GRAVES

Site	*Original Description*	*Locality*	*Catalogue Numbers*	*Grave or Tomb Designations*	*Styles Represented by Pottery*
A	A	Ocucaje	4489–4502		Proto-Nazcoid
B	B	Ocucaje	4624–4649	1–5	Proto-Nazca
C	C	Ocucaje	4568–4622	1–10	2, 3, 5, 6, 8: Middle Ica I 1, 4: Middle Ica II 7: Late Ica I
			4650–4660	a–b	Proto-Nazca
D	D	Ocucaje	4503–4533		Late Ica I
E	E	Ocucaje	4463–4488	1–9	Epigonal
			4534–4555	10–15	Epigonal
F	F	Ocucaje	4675–4788	1–23	Proto-Nazca
G	(E^1)	Ocucaje	4556–4566		
H	(A^1)	Ocucaje	4790–4807	1–4	1: Proto-Nazcoid
M		Chulpaca	4276–4462		Middle Ica II
S		Santiago	4894–4902	a-d	a, e1, e3: Proto-Nazca c: Late Ica I
			5481–5520	e–f	e2, f: Middle Ica II
T		Tate-Chulpaca road	4904–5475	a–n	f, h1–2, i1–4: Late Ica I a, d10, n: Late Ica II d1, d8, i5, k, l: Inca
X	A	Galagarza	4205–4228		Late Ica I
Y	B	Galagarza	4229–4275		
Z		Galagarza	4827–4873	1–4	1–6: Middle Ica II
			4878–4893	5–7	

Grouped by Styles

Proto-Nazca	B 1–5, C a–b, F 1–23, S a, e1, e3
Proto-Nazcoid	A, H 1.
Epigonal	E 1–15
Middle Ica I	C 2, 3, 5, 6, 8.
Middle Ica II	C 1, 4, M, S e2, f, Z 1–6
Late Ica I	C 7, D, S c, T f, h1–2, i1–4, X.
Late Ica II	T a, d10, n.
Inca	T d1, d8, i5, k, 1.

Other graves contain no pottery or pottery whose type could not be determined with certainty.

CLASSIFICATION OF POTTERY TRAITS BY STYLES

The method of classification by style according to unbroken grave lots on which this study rests is the same as that followed in the study of the Chincha collection previously reported on in this volume. It is therefore unnecessary to proceed by the step-by-step demonstration observed in that paper, and the results can be presented at once. The most notable findings that are quantitatively expressible have been brought together in the subjoined table.

POTTERY TYPES ACCORDING TO STYLES

	Proto-Nazca (pl. 25–29)	Epigonal (pl. 30)	Middle Ica I (pl. 31)	Middle Ica II (pl. 32–35)	Late Ica I (pl. 36–37)	Late Ica II (pl. 38)	Inca (pl. 39–40)
Total number of pottery vessels	150	26	19	150[1]	173	28	75
FORM							
Globular or bell-shaped jars with pair of linked small mouths	11	0	0	0[1]	0	0	0
Open bowls, sides somewhat flaring, concave in profile	35	0	0	0	0	0	1
Shallow bowls (or plates), sides straight or convex, base round or pointed—							
Patterned	(5)	8	3	14	3	0	0
Without pattern	0	0	4	17	1	0	0
Handleless jars, short spout cylindrical	0	7	0	0	0	0	0
Handleless jars, short spout with slight flare, mouth exceeding neck by less than ⅓	1	0	8	3	1	0	1
Handleless jars, short spout with considerable flare, mouth exceeding neck by ⅓ to ⅔	0	0	1	14	6	6	1
Handled jars, long spout	0	0	0	0	11	1	0
Very low bowls, flat bottomed, sides sloping inward	0	0	1	18	7	1	0
Low bowls, base and mouth equal in diameter, sides concave	0	0	0	14	22	3	5
Black yarn bowls, sides constricting upward, incised	0	0	0	1	0	2	2
Barrel shaped canteens	0	0	0	1	2	3	2
Flat canteens	0	0	0	1	2	0	0
Bevel-lip bowls, cone frustum shape	0	0	0	14	10	0	0
Bevel-lip bowls, other shapes, usually flattened spheroid	0	0	0	1	12	0	0
Jars with ribbon handles less than 2.5 cm. wide	1	0	0	6	7	1	8
Jars with ribbon handles more than 2.5 cm. wide	0	0	0	0	9	0	1
Handles in horizontal plane	0	0	0	0	0	4	5
Aryballoid jars	0	0	0	0	0	0	6
Vessels with a foot	0	0	0	0	0	0	5
Double jars with long spouts, one bearing a modeled figure	0	0	0	0	0	0	3

[1] Excluding a solitary Proto-Nazca vessel found among the purely Middle Ica II remains of site Z.

Ornament / *Color*	Proto-Nazca (pl. 25–29)	Epigonal (pl. 30)	Middle Ica I (pl. 31)	Middle Ica II (pl. 32–35)	Late Ica I (pl. 36–37)	Late Ica II (pl. 38)	Inca (pl. 39–40)
Smoked black (bucchero)	0	0	0	9	25	5	21
1-color pattern[2]	0	0	3	7	0	0	0
2-color pattern[3]	7	1	0	11	14	2	6
3-color pattern [4]	42	15	1	55	82	14	21
4-color pattern [4]	49	8	3	35	0	0	10
5-color pattern [4]	34	0	2[5]	3	0	0	0
6 or 7-color pattern [4]	8	0	0	0	0	0	0
Incised blackware	0	0	0	2	1	2	4
Incised uncolored	4	0	0	0	0	0	0
Pattern							
Human headed demon, with insect, serpent, or monster body	16	0	0	1	0	0	0
Cut-off human heads	9	0	0	(2)	0	0	0
Hummingbird or condor, naturalistic	9	0	0	0	0	0	(2)
Water bird, naturalistic	7	0	0	0	2	1	0
Llama, rat, or mouse	3	0	0	0	1	0	0
Fruits	16	0	0	0	0	0	0
Symmetrical animal head (eye and nose conventionalized)	0	6	2	0	0	0	0
Arcs or angles pointed inward from edge of vessel	1	7	2	2	0	0	0
Zone of dots, circles, or rectangles in lower half of vessel	0	1	3	12	1	0	0
Zone of dots, circles, or rectangles in upper half of vessel	0	0	0	11	14	2	0
Textile effect	0	0	1	15	54	3	1
Approach to textile effect	0	0	1	45	7	5	5
Grouped diamonds	0	0	0	7	48	3	1
Small triangles in series	0	0	0	0	20	4	2
Conventionalized but recognizable bird	0	0	3	11	4	5	4
Conventionalized but recognizable fish	0	0	0	0	7	1	1
Insects or worms	0	0	0	0	0	0	10
Modeling							
Vessel in shape of animal or bird	1	1	0	1	4	0	1
Vessel in shape of human figure or head	3	1	0	2	4	0	1
Modeled animal attached	0	0	0	1	0	0	3
Modeled peanut, corn ear, etc	0	0	0	0	0	0	3
Vessel in shape of squash	0	0	0	0	2	1	0
Plates with handle in form of bird	0	0	0	0	0	0	5
Flageolet in shape of univalve shell	0	0	0	0	2	0	2

[2] Single color applied on what appears to be the unslipped paste of the vessel.

[3] Two color pattern applied on the paste, or one color in slip and another in pattern.

[4] The slip is counted as a pattern color.

[5] It is difficult to decide whether there are four or five colors on these two vessels.

It will be observed that each style shares certain traits with those assumed to precede or succeed it, and differs from them in other traits. As the number of traits is considerable, and the number of vessels ranges from 19 to 173 for the various styles, averaging 85, the differentiation of the seven phases is indubitable and their assumed succession highly probable.

So far as the frequencies make it worth while, the absolute figures of the large table have been converted into percentages of the total numbers of vessels, in order to correct a possible appearance of irregularities of occurrence due to the available series of specimens from some styles being larger than from others. These percentage figures, which follow, are particularly impressive.

PERCENTAGE DISTRIBUTION BY STYLES

	Proto-Nazca (pl. 25–29)	Epigonal (pl. 30)	Middle Ica I (pl. 31)	Middle Ica II (pl. 32–35)	Late Ica I (pl. 36–37)	Late Ica II (pl. 38)	Inca (pl. 39–40)
6 or 7-color pattern	5	0	0	0	0	0	0
5-color pattern	23	0	10*	2	0	0	0
4-color pattern	33	31	16	23	0	0	13
3-color pattern	28	58	5	37	47	50	28
2-color pattern	5	4	0	7	8	7	8
1-color pattern	0	0	16	5	0	0	0
Uncolored	7	8	53	26	45	43	51
Bucchero	0	0	0	6	14	18	28
Bevel-lip bowls	0	0	0	10	13	0	0
Textile effect pattern	0	0	5	10	31	11	1
Pattern of diamonds or triangles in series	0	0	0	10	40	25	4

* Should perhaps be counted as 4-color.

Form.—Two of the typical shapes of Proto-Nazca are wholly confined to it: a more or less spherical jar with two small mouths connected by a ribbon-like handle (pls. 25, 29), and a deepish bowl, of inverted bell shape, the bottom being round and the upper part concave in profile (pls. 26–29). The "shallow bowls or plates" are of the latter form in Proto-Nazca (pl. 28 *g, h, o, q*) while from Epigonal to Late Ica I they are uniformly shaped rather like porridge bowls except that the bottom is more or less pointed (pls. 30, 31, 35).

Single mouthed jars suddenly appear in Epigonal (pl. 30) where they are abundant, and continue (pls. 31, 32, 33, 36) through to Late Ica II (pl. 38) with increasing flare of mouth. Late Ica I and II add a very long spouted handled jar (pls. 37–39). In Inca appear the familiar aryballoid jars (pls. 39, 40) and double vessels with long spouts, one of them false and bearing a modeled animal (pl. 39). Wholly Inca are also vessels with foot or lid; whereas the placing of the handle more or less horizontally while its ribbon is set on edge is a trait shared with Inca by Late Ica II (pls. 39 *a, c;* 40 *m*).

Middle Ica, especially in its full or II form, brings the bevel-lip bowl, at first in the shape of a cone frustum (pl. 32 *c, d*), then, in

Late Ica I, prevailingly as a flattened sphere (pls. 36 *d*, *g*; 37 *a*), as in Late Chincha I. Also as at Chincha, the form goes out completely in Late II and Inca.

Also Middle Ica in origin are bowls that rise sharply from a flat base. At first these are prevailingly quite low, with sides tending to slope inward (pls. 32, 35); later they are somewhat higher and the sides constrict somewhat (pl. 36 *h*, *i*). By Inca time the latter form has wholly supplanted the earlier.

Canteen shaped vessels, both flat and barrel-like, also come in, hesitatingly, in Middle Ica II (pl. 33 *e*) and continue to the end (pl. 39), perhaps being most in favor in Late Ica II (pl. 38).

Incised black yarn bowls (pl. 38 *j*), which at Chincha were found typical of Late II with some persistence into Inca, have the same range at Ica, plus however one occurrence in Middle Ica II, which, if there has been no error, carries the type back as far as any form of blackware.

Color frequencies.—As to color, statistics are particularly impressive. Patterns of six or even seven[8] colors occur in eight Proto-Nazca vessels, and in not a single one from any other period. Five-colored vessels are abundant in Proto-Nazca, constituting nearly a quarter of the total. They disappear in Epigonal, reappear somewhat doubtfully and rarely, respectively, in Middle Ica I and II, and then go out for good. Quadruple polychrome has its highest frequency in Proto-Nazca and is also the most frequent style of any in that period; becomes secondary to three-color in Epigonal; is probably[9] more frequent than three-color in Middle Ica I although the percentage falls as against Epigonal four-color because of the sudden frequency of uncolored ware; again becomes secondary to three-color in Middle Ica II; snuffs out totally through both Late Ica phases; and finally reappears again, with rather low frequency and in new tints, but unmistakably, in Inca. Three-color ware occurs in every style, but is specially typical of Epigonal, and virtually the only color scheme of Late Ica. A single color pattern applied apparently without slip is confined to Middle Ica.

Smoked blackware or bucchero, lacking from the first three styles, appears in Middle Ica II (pl. 35) and becomes increasingly frequent in every succeeding phase. Facts like this one are of interest as indicating that, however locally the perfecting of the classic Inca

[8] The counts are based on careful examination to preclude the counting of a single pigment as two when it happens to be unequally fired in different parts of a vessel.

[9] The series are too small for certainty.

style was carried on, this style was by no means a pure local one that was suddenly carried over Peru by the Incas as something radically new, but that it had some of its roots in aesthetic and industrial tendencies originating long before and perhaps often at a distance from Cuzco. Conversely, the relationship of the Cuzco style to other local styles may have predisposed some of the latter to acceptance of certain traits emanating from Cuzco before the full dominion of the empire was asserted, and may subsequently have led to the acceptance of pure Inca forms to the degree that they were locally manufactured in abundance. On the other hand, these pure Inca forms, like the aryballoid, footed bowl with one loop handle, and handled plate (pl. 40), come in so late that they must be regarded as specific developments of the pottery style of the nearer environs of Cuzco.

Less positive inferences can be drawn from unpainted and unsmoked ware, whose frequency is conspicuously low in the first two styles and then rises sharply and remains approximately constant, because of a possible interpretation alternative to the obvious one: namely, that the Proto-Nazca and Epigonal people indeed made colorless kitchenware but did not set it into their graves. In other words, mortuary practices rather than manufacturing ones may have altered in this point. At that, however, mortuary pottery was finer and household ware cruder in Proto-Nazca than in the five last styles, whose wares throughout are more on one level. Epigonal in this matter of relative uniformity goes with the later phases, on account of its best ware being technically poor.

Incised ware is never of much frequency, but it is noteworthy that all uncolored pieces found are Proto-Nazca (pls. 28 *f*; 29 *d*); and that bucchero ones are represented as far back as unincised bucchero goes, that is to say Middle Ica II (pl. 35 f); and persist with the unincised.

Colors employed.—Assuming the five-color combination to be most representative of the Proto-Nazca style, we can call the typical scheme white, yellow, red, slate, black. The white ranges in some specimens to cream and dapple gray; the yellow to flesh, buff, burnt orange, and pinkish; the red to maroon and purplish; the slate to olive, light brown, gray, violet, and red violet; and the black to brown. If the colors are six or seven, there is an extra yellow, red, or slate pigment. Thus the two seven-color specimens[10] in the collection show respectively white, dark yellow, red, dark red, light gray, dark gray, black; and white, pale flesh, dark flesh, violet red, slate gray, olive brown,

[10] B5–4645 and F15–4755.

black. The four-color scheme—the most frequent—generally omits slate, but sometimes red or yellow. If the colors are only three, they are usually black, white, and red—as in later periods. The normal Proto-Nazca slip, as shown by insides, rims, and undecorated portions, is a hard red, and well polished. It has body and firmness, like all the colors, but tends to scale off the paste in rather large flakes. Nearly as often as not, the ground color for the design area is white.

Epigonal shows an almost invariably buff slip, rather thinly washed on, and possibly nothing but a coating of the same clay as the paste. Only three colors are applied, black, white, and red; and more frequently black and white, or black and red, than all three together. All the colors are weak and lusterless.

Middle Ica I patterns are firmer than Epigonal ones, but the colors mostly still lack vigor. Slate and yellow reappear, sometimes to the exclusion of white, alongside red and black. Two pieces may be somewhat doubtfully described as showing flesh, red, maroon, gray, and perhaps white.

Middle Ica II keeps the four-color polychrome, but tends to a preponderance of three-color: black, red, and white, the latter ranging to yellow or buff. If there is a fourth color, it is a shade of the slate or violet of Middle Ica I and Proto-Nazca. White and yellow as such do not seem to be used on the same vessel. The ground color or slip tends to red, somewhat lighter or softer than the Proto-Nazca, and containing more yellow and less blue. It is generally pretty well polished.

Late Ica I settles down rigorously to a three-color limitation, which is black, red, and white, the latter rarely chalky, if used in masses, but verging toward light tints of buff. The slip is most commonly red, and less frequently white than in the Late I of Chincha. Late Ica II follows the same scheme exclusively, and Inca prevailingly. When there is a fourth Inca color, it is the old slate or gray, reappearing for the third time. It has a violet tinge about as often as not, just as the Inca 'white' is a definite yellow about half the time.

It is evident that just as Proto-Nazca uses most colors, it employs them with the greatest technical skill and precision, being possibly rivaled in this regard by Inca alone. Epigonal represents a sharp falling off technically and aesthetically, as it does in form. Middle Ica I wavers somewhat hesitatingly upward again, and II settles into a definite stylicizing of color as of figure. Late Ica I carries this tendency farther through a voluntary limiting to a three-color scheme,

just as it textilizes pattern. It is a period of restraint rather than of decay or ineptness, of hardening convention, with innovation in forms rather than in ornament. Late II shows no change; but Inca reveals a perceptible final re-widening of color horizon alongside thoroughly new pattern motives and forms.

Patterning.—As regards patterns, the statistics are clear enough, but of course convey an inadequate idea of the full stylistic differences. The semi-naturalistic tendencies of Proto-Nazca are only partly indicated by the 40 per cent frequency of demon, head, bird, quadruped, or fruit patterns (pls. 25–29) as compared with a scattering 1 to 2 per cent frequency of the same motives through the later periods—with a quite different handling at that. Epigonal patterning is far simpler and more sparing than Proto-Nazca and concentrates on two motives (pl. 30)—a conventionalized bird or animal head, usually double-ended, and arcs or angles along rims—which make up about half of its figures.[11] Both of these are found as well in Middle Ica I (pl. 31 *c*), in which a band of circles around the lower part of vessels (pl. 31 *a*) also comes into use, to persist, with some tendency to shift upward (pl. 32 *a, c, d*), nearly to Inca time. Middle Ica II (pls. 32, 33) introduces the first textile patterns, which overwhelmingly dominate Late Ica I (pl. 36) to become less frequent in II (pl. 38 *c, g*) and almost die out in Inca. The specific Inca patterns, such as those characteristic of aryballoids, and the swarming insect or worm patterns (pls. 39, 40), are rigorously confined to the Inca style.

SUMMARY DESCRIPTION OF STYLES

It may be of value to sum up the salient characteristics of each style, in order to convey a feeling for and clearer visualization of the succession of culture types represented at Ica.

The Proto-Nazca ware is unique and distinctive in color, design, and shape. The average number of colors used is four on a vessel. Dark red is the commonest ground color; white, varying to cream, light gray, or pale buff, next frequent. Designs, basically in these two colors, plus black, yellow, and slate or an additional red, vary to brown, gray, violet, flesh and to almost pure orange, pink, and blue in extreme cases of pigment application or firing. Designs are in large part anthropomorphic, human or cat-headed monsters encircling the

[11] The rim arc or angle appears in Proto-Nazcoid: pl. 29 *c*.

vessel (fig. 4) or holding human heads.[12] Rows of human heads more or less conventionalized, as well as fruits and seed pods, furnish motives for decoration. Birds portrayed fairly realistically, especi-

Fig. 4. Tracing of monster design on Proto-Nazca bowl B2–4625. White; violet (cross hatching); brown (hatching); black. (Pl. 27 *s*.)

Fig. 5. Bird design on Proto-Nazca two-mouthed jar S a–4894. White; violet (cross-hatching); yellow (hatching); black. (Pl. 28 *d*.)

ally the condor, hummingbird, and sea birds, are common as designs. Quadrupeds delineated in similar manner also occur, especially the mouse or rat, the llama, and felines. Fish are also naturalistically

[12] See the ornament analyses of this style by E. K. Putnam, Proc. Davenport Acad. Sci., XIII, 17–46, 1914, and E. Seler, Gesammelte Abhandlungen, IV, 1923.

portrayed, the shark and a tuna-like species being characteristic. On the whole it is coastal fauna that is depicted. Nonpictorial designs are less striking. They include squares, bars, circles, and spirals, but the prevalence of curvilinear over straight or angular elements is conspicuous. Among shapes, globular jars with a pair of bridged tubular spouts are distinctive of this period, and on these most often appear the human-headed demons with centipede or serpent-like bodies. A bell-shaped bowl, rounded at the base and flaring slightly toward the brim, is also characteristic; and round bottomed, wide-mouthed bowls are frequent. Modeling appears only

Fig. 6. Top of modeled Epigonal jar E2–3–4–4471. White; buff (stippling); red (hatching); black. (Pl. 30 *d*.)

in a few instances: two vessels in shape of human figures, one holding a human head, the other a fruit, and two rather crude bird figures verging on the Epigonal style, represent this technique. Only rude cooking ware is unpainted and incised. All of the ware save the cooking pots, and a few pieces suggesting the Epigonal, is highly polished. The great majority of pieces may have been made as mortuary pottery.

Early Ica or Epigonal shows marked technological inferiority to Proto-Nazca. There are fewer colors used, a reddish buff serving as ground color, and isolated, simple designs in dull white, red, and black being superimposed. The colors are much less clear and striking than are those of the Proto-Nazca pottery, the naturalistic portrayal of the latter is almost wanting, but the designs show some resemblance to the Proto-Nazca non-pictorial ones, although their execution is

rougher. A new design element enters: a double-snouted animal head, perhaps condor or puma, with an eye in the center (figs. 7–10). Flattened globular bowls narrowing toward the top, flattish conical bowls, and jars with short necks but no flare at the lip, are the characteristic shapes represented in about equal proportions.

Fig. 7. Conventional head design from Epigonal jar E13–4544. White, red, black. (Pl. 30 *o*.)

Fig. 8. Conventional head design from Epigonal bowl E14–4549. Buff, red, black. (Pl. 30 *j*.)

Middle Ica I gives the impression of a transition between the rather pauperized Epigonal and the more elaborate decoration of Middle Ica II. Much the same shapes appear here as in Epigonal. The short necked jar has more flare at the mouth; the roundish and conical bowls are represented; and added to these are pots with round bosses around their sides, and a flat dish with vertical sides but

rounded bottom. The same buff or light red coloring predominates, with patterns in dark red and black. The double-snouted head reappears, and two bird motives (fig. 12), angular and geometric in execution, anticipate the conventionalization of later styles. A large flaring-mouthed jar and in some degree two pots with bosses show a more elaborate scheme of geometric decoration with encircling black

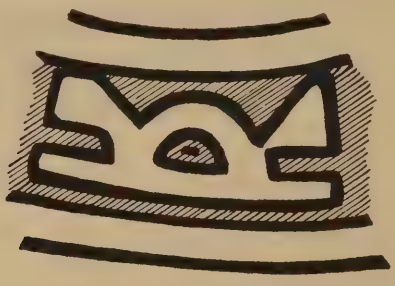

Fig. 9. Conventional head design from Epigonal jar E1–4464. Buff, red, black. (Pl. 30 *c*.)

Fig. 10. Conventional head design from Epigonal bowl E5–4474. Buff, red, black. (Pl. 30 *k*.)

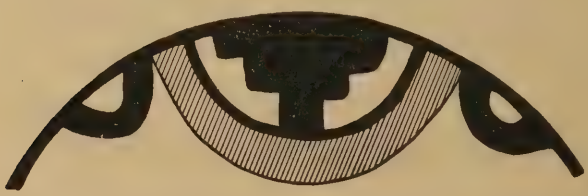

Fig. 11. Arc design from Epigonal bowl E11–4538. Buff, red, black.

and red bands and an upper zone in three-color pattern, while a row of conventionalized birds encircles the neck.

Geometric conventionalization of decoration marks the pottery of Middle Ica II. The design area is large and tends to cover the entire vessel instead of being confined to free standing figures. This surface is very often marked off into panels of rectangles or triangles, each decorated. Bands circle the larger vessels and between these, or on

them, are rows of simple geometric figures. Occasionally conventionalized birds are used in this form of decoration. In many cases the figures are close, approaching the textile pattern effect so characteristic of the following period. Interesting is the appearance of a somewhat exotic fauna, including probably the jaguar, monkey,

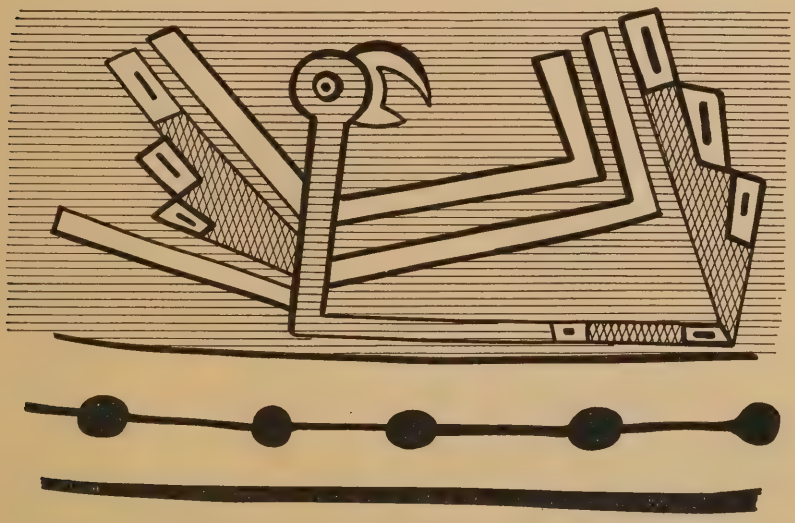

Fig. 12. Bird design on Middle Ica I jar C2–4592. Whitish (buff); red (hatching); violet (cross hatching); black. (Pl. 31 *g*.)

Fig. 13. Design on Middle Ica II bowl C1–4578. Background, red; stippling, white (buff); hatching, violet red; black. (Pl. 35 *d*.)

parrot, and alligator or a large lizard, done in a partly curvilinear but definitely geometric style (figs. 13–16), yet with the forms rather well suggested. In a modeled vessel (pl. 33 *b*) the jaguar appears unmistakably. Among shapes, three types are common: jars with flaring mouth; a dish with practically flat bottom and low vertical or in-sloping sides; and a small bowl constricting conically toward the

mouth which bears a gunwaled or beveled lip—a type now appearing for the first time. Black smoked bucchero also first appears in Middle Ica II, and in a variety of the shapes found in the colored ware. The proportion of black to colored ware, however, remains small. There is an unmistakable although not close resemblance in decorative treatment to the style of the carvings on the ruins of Tiahuanaco.

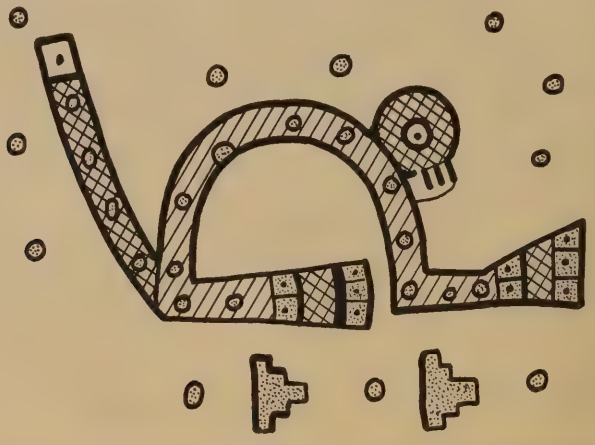

Fig. 14. Design on Middle Ica II bowl M–4333. Background, red; stippling, white (buff); hatching, violet; cross hatching, light red; black. (Pl. 35 c)

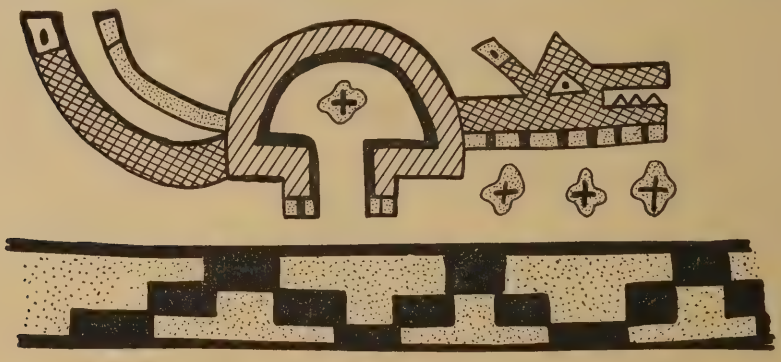

Fig 15. Design on Middle Ica II bowl M–4303. Background, red; stippling, white; hatching, violet; cross hatching, buff; black. (Pl. 32 *c*.)

The pottery of Late Ica I is characterized by the predominance of the textile-like patterns. The coloring is wholly red, white, and black. Two forms stand out: the bevel-lipped bowl, either as in Middle Ica II or rounded; and a flat dish with nearly vertical or inward sloping sides, usually somewhat concave. A series of diamonds, either white rimmed with black or vice versa, meet point to point in rows on a red background, giving a distinct 'woven' look. Or, a series of conven-

tionalized birds or fish, their ends touching to form rows, is done in black and white on a red field. The textile effect is evident in many other ways than these. There is a larger proportion of blackware in this style than in the preceding. Small decanter-like jars with long necks appear. There is occasional modeling: human faces on the long necked jars, pots in human form, reclining llamas, a few birds, and some vegetable forms, mostly in miniature specimens.

Late Ica II is clearly transitional between the Late Ica I textile pattern style and the Inca style which follows. There is a breaking up of the rigorous stylicization of Late Ica I and various approaches to the

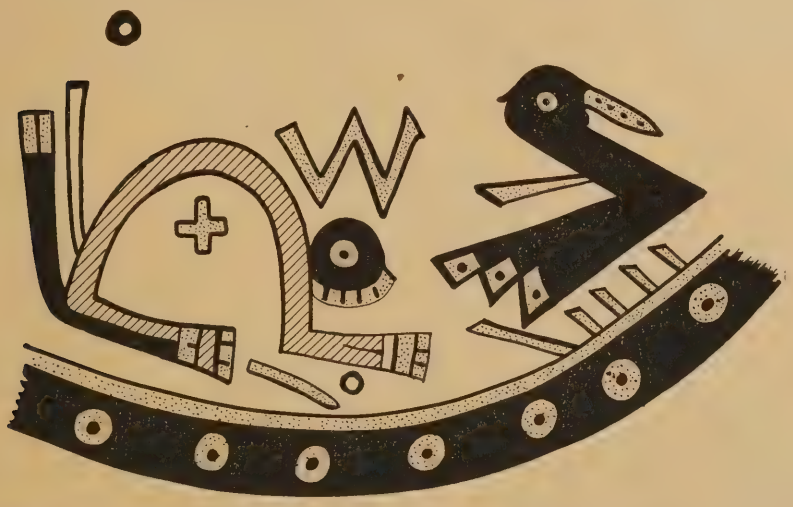

Fig. 16. Design on Middle Ica II jar M–4302. Background, red; stippling, white (buff); hatching, light red; black. (Pl. 32 *a*.)

Inca manner without however the appearance of some of the most characteristic Inca forms, such as the aryballoid jar and goblet with foot, or the four-color scheme.

The Inca culture is well represented at Ica. Four colors begin to appear instead of the invariable white-red-black of Late Ica I and II, with considerable tendency toward yellowish buffs, browns, and olives. Blackware is more frequent than in any previous style. A whole series of new forms comes in, including some with plastic representation. A series of these is shown in figure 17. The vessels there outlined are all in polished blackware, but several of the shapes occur in the collection in colors also. On the other hand, black aryballoids are unrepresented. The Inca style is too well known to need further description.

DURATION, DISTINCTNESS, AND SUCCESSION OF STYLES

It should be remembered that the phases distinguished rest not on stratification of pottery types but on empirical classification. Each lot designated as of one provenience —which in some cases was a grave or tomb, in others a site or cemetery—was examined as a unit, and then classed with other lots showing the same characteristics. When a lot proved to contain material of two kinds which elsewhere occurred in separate lots, supplementary data in Dr. Uhle's catalogue almost

Fig. 17. Inca vessels of polished blackware. From left to right, top, T d8–5061, T d1–4998, T k–5388, T i5–5342; bottom, T k–5379, T k–5372, T i5–5340.

always indicated several interments within one 'grave,' or some within it and some adjacent. Thus S e included S e1 to S e4; similarly, T d1 to T d10, T h1 to T h2, T i1 to T i5. When thereupon a heterogeneous lot from such a 'grave' or environs of a grave was subdivided according to interments, the resulting smaller groups were regularly homogeneous in character.[13]

This suggests, first of all, that the phases, or at least those from which vessels are found in relatively close association, were probably of no very great duration. This applies to Middle I and II, associated at site C; to Middle II and Late I, associated at C and S; to

[13] The only striking exception is a quite isolated two-mouthed jar in full Proto-Nazca style found at site Z among material which otherwise is wholly Middle Ica II (Z 4–4851). The authors agree with the excavator that this piece must represent a vessel found by the Middle Ica II people in a Proto-Nazca interment and reinterred by them in a burial of their own day.

Late I and II, associated at T; and to Late II and Inca, also associated at T. It probably does not apply to the association of Proto-Nazca with Middle II and Late I at S, both on account of the thorough stylistic distinctness of Proto-Nazca; and because Proto-Nazca in all other cases is found separate (A, B, C a–b, F, H), whereas the only pure sites of the other periods are M (Middle Ica II), D (Late Ica I), X (Late Ica I). The occurrence of Proto-Nazca ware in the same cemetery with Middle and Late Ica ware at S can therefore probably be attributed to accident. In general, then, Proto-Nazca artifacts lie segregated, as do the Epigonal ones discovered (site E.) Graves of two or more of the five other styles, however, mostly occur in several parts of one site, indicating that these styles probably succeeded each other more closely or overlapped.

This is also indicated by the fact that transitions between them are more numerous. The two Middle Ica phases do not diverge markedly. Middle II and Late I, both represented by full series, connect in their use of bevel-lips, textile patterns, and the like. And Late Ica II, like Late Chincha II, is clearly a transition from Late Ica I to Inca. It might in fact be described as a phase of Late Ica I in which the pure style of the era had begun to be modified under Inca influences, but certain of the most typical Inca forms—aryballoids, goblets with foot, insect pattern—had not yet been introduced. Dr. Uhle goes so far as to say of these last three periods—which he recognizes as two, "Later Chincha" and Inca—"No certain distinction can be made within the Later Chincha period between what was pre-Inca and what had already fallen under Inca dominion;" and again: "the point is simply this, that indigenous Chincha civilization and imported Inca civilization were contemporaneous in the valley."

Substantiation of this view is furnished by glass beads discovered by Dr. Uhle in Late Ica I graves T f and T i1, nos 5110 and 5468b. Both of these graves contain abundant pottery of clearly marked type. The only conclusion possible is that the Late I style may well have begun to flourish some centuries before the Inca conquest, but that it continued through the brief Inca period and until after the Spanish conquest. With the end of Late I and the Inca phase at Ica thus contemporaneous, Late II must also have been contemporaneous with Inca—perhaps wholly so. Of these three styles, then, Late I is the only one which may have had separate existence at Ica for a time; and all three were being practiced at the time the Spaniard came. Since, however, they are distinguishable, and occur each in its own

graves, they must be regarded as phases characteristic of separate classes of the local population.[14]

As to the sequence of the phases, once this qualification has been recognized, there can be no serious doubt about the last five. They evince a continuity of stylistic development which leaves no choice as to their order, once the Inca forms are accepted as on the whole the latest. It is also significant that the proportion of perishable artifacts to pottery is lowest for Proto-Nazca and Epigonal, and highest for Late Ica and Inca.

As regards Proto-Nazca and Epigonal, while the case is not quite so certain, the plates and table will probably seem sufficiently convincing of the greater distinctness of Proto-Nazca than of Epigonal from the five later styles. In fact both forms and ornaments of Epigonal—for instance the shallow, unslipped bowls, and the arc designs along their edge as well as the animal head—recur in Middle Ica.

Further, the few pieces designated as Proto-Nazcoid (pl. 29 *c–g*) can fairly be described as simplified Proto-Nazca with leanings toward Epigonal,[15] This fact indicates the sequence: Proto-Nazca, Proto-Nazcoid, Epigonal, followed by the five later phases, without such utter gaps anywhere in the sequence as to necessitate the assumption of a complete break in culture in the valley.

This point of view clashes with Dr. Uhle's interpretation of Epigonal as a decadent successor of the Tiahuanaco culture, especially in view of the obvious stylistic leaning—admitted by him—of Middle Ica on Tiahuanaco. A suggestion in his notes that Middle Ica might represent a local and Epigonal a general Peruvian outgrowth from the Tiahuanaco style, and that the two cultures might conceivably have coexisted in the same valley, is unconvincing.

A much simpler interpretation would be that Epigonal came first of the three, and that Tiahuanaco and Middle Ica represented local developments—perhaps synchronous ones—out of the widespread and simple Epigonal style in an era of upward swing of culture. In this case Ica Epigonal would still be truly 'epigonal'; but to Proto-Nazca and other pre-Tiahuanaco cultures instead of to Tiahuanaco. This interpretation certainly fits fairly well all the data available from Ica. Whether it would equally well account for the data from elsewhere in Peru, the authors are not yet prepared to say.

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[14] Compare the discussion of the analogous relation of Late Chincha II and Inca at Chincha, this volume, p. 49.

[15] Dr. Uhle in fact seems to have classed the Proto-Nazcoid material from site A as Epigonal. Compare pl. 29 *d* with Jour. Soc. Américanistes, x, 1913, pl. 11, *b*, 4. Hence also his statement, *ibid.*, 347, and again in Appendix C below, as to two separate Epigonal cemeteries—evidently sites A and E.

As to the alleged stylistic resemblance between Proto-Nazca ware and the incised sherds from the earliest shell heaps of Ancon,[16] the authors reserve judgment beyond remarking that the resemblance is not so close as to be obtrusive.

The history of pottery development at Ica may then be summarized as follows. The earliest ware yet discovered is Proto-Nazca, whose antecedents are unknown, but which took shape locally, about Ica and Nazca, and was never, in its pure form, made at a distance. This art probably decayed to give rise to Proto-Nazcoid,[17] which in turn may have been influenced by, and finally submerged in, the widespread Peruvian culture known as Epigonal, whose local variety can also be designated as Early Ica. Out of this, rather possibly, developed the Middle Ica style in its two phases, perhaps somewhat influenced by the Tiahuanaco style. Late Ica I is clearly a continuous development out of Middle Ica II, and has close analogues or mere local variants from Chincha to Atacama, but the style seems to have reached its culmination at Ica. With the coming of Inca influences, Late Ica I modified to Late Ica II, and at the time of the Spanish conquest had partially begun to be replaced by pure Inca culture.

CONCLUSIONS

Seven types and in part periods of pottery can be distinguished at Ica, or, more exactly, five types and two sub-types.

The succession of the last five of these, Middle Ica I and II, Late Ica I and II, and Inca, is beyond question, although the last three were also in part contemporaneous. The stylistic development of the five is so continuous that once Inca is accepted as latest, the others cannot be put in any other sequence. The last three types have close parallels at Chincha. The cultures of these two south Peruvian valleys during the last pre-Spanish centuries must be regarded as nothing more than slightly variant local forms of the same native culture, to which there became added the Inca culture and a third strain hybrid of the two.

The two remaining types, Proto-Nazca and Epigonal (Early Ica) stand farther apart from the other five than these differ among one another. They are therefore probably earlier; and of them, Proto-Nazca, as the more distinctive, is probably to be put in first place.

[16] Uhle, Intern. Congr. Am., XIV (Stuttgart, 1904), 576, 1906; XVIII (London, 1912), 30–31, 1913.

[17] Also conceivable as incipient Proto-Nazca. See pl. 29 *c*, *g*.

Moreover, certain Epigonal shapes and designs are traceable in Middle Ica. On the other hand, there are no such connections between Proto-Nazca and Middle Ica. There is therefore rather strong indication that the historic sequence of types was Proto-Nazca, Epigonal, Middle Ica, Late Ica.

The Ica Epigonal differs from all other Ica styles except the Inca in possessing fairly close analogues at a distance from Ica. A certain degree of similarity is shown by the Epigonal ware of Pachacamac in central Peru.[18] A little farther north, at Ancon, whose potteries are being studied by one of the authors, the resemblances are vaguer. Still farther, about Trujillo, whose ware is being described by the other author, there is a ware of Tiahuanaco style but no separate Epigonal like that of Ica. The concept of Epigonal as a generic Peruvian style must therefore be used with caution. It probably has an objective foundation but as yet seems partly subjective.

Both the Ica Epigonal and Middle Ica are undoubtedly related to the Tiahuanaco style. In certain ways Middle Ica seems to show more of the crisp character of the style of Tiahuanaco. Ica Epigonal is more slovenly, rounded, and hasty than either. It is difficult to see how Ica Epigonal could represent a decadence of pure Tiahuanaco, as Uhle supposes, out of which there then grew Middle Ica with a revival or persistence of Tiahuanaco traits that had been lost during Epigonal. The Ica Epigonal may therefore prove to be 'epigonal' to Proto-Nazca as much as to Tiahuanaco.

There is some indication—a half-dozen vessels from two small sites—of a Proto-Nazcoid style showing the Proto-Nazca traits in reduced intensity. This eighth kind of Ica ware may be conceived as incipient Proto-Nazca or as decadent Proto-Nazca. In the latter case, it ought to show leanings toward Ica Epigonal; as in fact it seems to. This question is probably also answerable only through evidence contributed by tracts outside Ica valley, such as the Nazca area.

There is nothing in the data here discussed to afford much clue as to the duration or absolute age of the periods dealt with. The latest estimate by Uhle—Proto-Nazca, 50–650 A.D.; Epigonal, 650–900; Middle Ica, 900–1100; Late Ica, 1100–1400; Inca, 1400–1550—seems moderate and reasonable.

The collections of metal work, textiles, and all objects other than pottery made for the University of California at Ica by Dr. Uhle, will be described and interpreted subsequently.

[18] Uhle, Pachacamac, pl. 5, 1903.

APPENDIX A

NOTES ON ICA VALLEY

Extracted from field reports by MAX UHLE

Ica is reached by 80 or 90 km. of railroad from the port of Pisco. This town is 20 to 25 km. south of Tambo de Mora, the harbor of Chincha valley, only some 5 km. of the intervening distance being desert. The valley of Pisco is longer and narrower than Chincha valley and lies along the Chunchanga river, whose name reminds one of Chincha. Nine leagues up the valley from the coast are the ruins of Tambo Colorado, probably the most extensive in the provinces of Pisco and Ica and possessing the repute, probably unfounded, of fabulous antiquity. Upstream from Tambo Colorado at an elevation of 2900 m. lie the ruins of Huaitara, also notable. Tambo Colorado is about 9 leagues from Ica (eight of them desert), but the Chunchanga and Ica rivers on which the two places lie flow respectively nearly west and south, so that their mouths are much farther apart.

Ica is about 400 m. above sea level. Its valley, like those of Palpa and Nazca, is an interior one, with a continental, hot, almost rainless climate. The city of Ica lies about 20 leagues (100 km.) upstream from the mouth of Ica river. The stream carries water at all times to the point where it debouches from the mountains into the head of Ica valley, 6 leagues above Ica. From there on it runs, during the January and February rains in the mountains, as far as Ocucaje, 8 leagues below Ica, elevation 310 m. Below Ocucaje the river rarely if ever carries water, this being taken up by irrigation above. There is a steady subterranean flow or infiltration which makes agriculture possible as far down as Ocucaje even if surface water fails to arrive more than once a year. In Ica valley, which is an open stretch 13 leagues long by about a league and a half in breadth, algarrobas (mesquite like trees) grow where the ground level of water is not more than 6 m. below the surface, and tillage is possible where it comes within 4 m. Below Ica valley the river course alternates between rocky canyons and flat basins, the uppermost of which is Ocucaje, beyond which follow Chiquesillos, Callanga, Oyujaya, Samaca, Villacuri, Santa Rosa, and Monte Grande, the last being one league from the sea. Ocucaje produces cotton and vines, but in the

lower basins only enough water can be got for the needs of life by digging, and some of the basins do not even yield wells.

It is clear that the lower courses of the river were once better watered. Not that the climate has changed, but more and more water has been drawn off upstream. At Aguada de Palos, a league upstream from Ocucaje, there are ancient cultivations that are now unirrigable; and at Oyujaya, 6 leagues below, where at present only algarrobas grow, there are old ditches (azequias) and adobe ruins of considerable size. There seem to be no laws preventing the unlimited appropriation of water upstream, so that the cultivated and inhabited area is shifting in that direction. This drift began in pre-Spanish times. In Ica valley, beginning several leagues above the city and extending 2 leagues below, the Chirana extends through the eastern side of the valley, and, although an artificial channel attributed to the Incas, now carries more water than the river proper, often being full while the stream bed is dry, as in the season of 1900–1901. Tradition has it that an Inca fell in love with the daughter of the chief of Tate, some 2 or 3 leagues below Ica, and was not accepted until he constructed the Chirana.

Two leagues downstream from Ica and 30 m. lower is Pueblo Nuevo, near which, at Galagarza and Chulpaca, excavations were conducted. Pueblo Nuevo is said to have been the first site of Ica, founded by Valverde, and removed on account of earthquakes. Not far distant is Tate; also in the vicinity is said to have been Tajaraca, an ancient native town. As there is also a Luja-raca and a Taja-gnana, Taja- perhaps meant high or great. While tradition makes Tate a flourishing town in Inca times (and excavations in its environs corroborate), Tajaraca is much older, as shown by excavations at Chulpaca, which forms part of what was Tajaraca. The uppermost 1.5 m. here carry layers of leaves from thatch, and in these levels objects of Inca period may be encountered. The tombs, however, lie 4 to 5 m. deep, contain objects of quite a different sort,[19] and in Inca times had evidently been forgotten since centuries.

Ica valley contains no important ruins, but ancient remains are extraordinarily abundant. Potsherds occur in numbers of places. Cemeteries usually lie deep. There are mounds of abobes, formless hillocks up to 5 m. high, representing ancient buildings whose details have been lost. These occur at Ocucaje, in the upper valley about Ica, and especially on the haciendas San Ramon and Galagarza where

[19] Middle Ica II.

ancient Tajaraca may have stood. All these mounds seem to belong to the last pre-Inca period.[20] Some of them have yielded pottery and gold. Artifacts are also found in large, irregular platforms, 2 to 4 m. above the irrigated plain, which apparently are natural formations, bear only scattered algarrobas, seem never to have been cultivated, but have served for habitation and burial, although the dry slopes of hills abutting on cultivable land were also used for interment. Ancient fields and ditches have already been mentioned.

Near the mouth of Ica river, five minutes' walk from the sea, there are two splendid sambaquis or shellmounds, each about 180 m. long from east to west, 100 m. wide, 50 m. high. These appear to be the first discovered on the Peruvian coast, and to resemble those of the southern Brazilian coast. Their bases may be low natural elevations, but probably 40 m. or more of their depth is almost pure shell kitchen-midden, only slightly mixed with sand. About a dozen varieties of marine mollusks are distinguishable. On these mounds I found erect house posts, insignificant adobe wall remains, fragments of textiles and wooden slings, a stone ax fragment, chips of stones, llama bones, whale vertebrae, and seaweeds, all well preserved on the surface. Also there were strewn about broken human leg bones, suggesting that they had been cracked for marrow. Potsherds indicated the civilization of the surface as the last pre-Inca one.[21] On account of the expense of digging mounds as large as these, dynamiting to their interior was considered but given up as unfeasible.

APPENDIX B

NOTES ON SITES AND GRAVES EXCAVATED

Extracted from Catalogue of Max Uhle[22]

Site A, Ocucaje. Excavations on a rock near the ruins of D [see map, fig. 3]. The site lies about 20 m. higher than the ruins, in a depression between two small summits rising about 10 m. above it. The remains are of the Proto-Nazca style.[23] The skulls are strangely elongated by deformation.

Site B, Ocucaje. Excavations in the western part of El Tambo, where this falls to the river bed. The Tambo is a bare elevation, about 3 m. higher than

[20] *Sic,* but cf. the statement as to the age of Tajaraca in the preceding paragraph.

[21] There are about a dozen sherds in the Museum (4–4671, 4673). Some of these are Late Ica; some almost certainly Middle Ica; and one or two suggest Proto-Nazca influence. One is incised.

[22] Condensed from comments in the excavator's specimen catalogue. Comments by the authors in square brackets.

[23] "Proto-Nazca" has been substituted throughout for Dr. Uhle's "Newfound style of Ica" as he then called it.

the plain, about 500 m. long and from 60 to 250 m. wide. Proto-Nazca style. Originally there may have been about a dozen graves close together. Most of them had been opened by the natives who have their huts on the Tambo and are accustomed to make excavations on the day of San Lorenzo in August. I found about four [*sic*] graves unopened.

B 1: About 0.5 m. deep. Nearly all the bones decayed.

B 2: 2 m. deep.

B 3: A wide grave, 4 m. deep. It seems that a little gold had been found in this grave, which had been entirely cleared. Some broken vessels seem nearly complete and worth reconstructing.

B 4, 5, without comment.

Site C, Ocucaje. Excavations at the eastern end of the Tambo. The graves met with represent various civilizations. At least the contents of the Proto-Nazca graves were free from admixture with objects of other periods, and were apparently older.

C 1: Large grave, 3 m. deep, 1.7 m. long, 1.2 wide.

C 2: Another large grave, 4.5 m. deep; 4592, jar with bird pattern transitional [i.e., Middle Ica I] from Epigonal to older Chincha [Middle Ica II].

C 3: 4597, later Chincha [Late Ica I]; 4598–4600, older Chincha [Middle Ica II].

C 4: Later Chincha [Late Ica I].

C 5–10, no comment.

C a: Small grave containing Proto-Nazca remains. A similar grave or two may have been previously excavated here.

C b: Larger grave.

Site D, Ocucaje. Excavations at the foot of the rock site A, in an extensive cemetery half surrounding the before-mentioned ruins. Later Chincha style [Late Ica I].

Site E, Ocucaje. Excavations in the west of the valley, beyond the cultivated fields and algarroba groves, close to the hills of sedimentary formation. Epigones of Tiahuanaco. The same civilization occurs at Pachacamac between older layers below and later ones above.

E 1–15, no comment, except that E 2, 3, 6, 7, 8, 9 are mentioned as previously dug into and E 5 as intact.

Site F, Ocucaje. Excavations in a cemetery at the foot of the Cerro Blanco, between this and the cultivated part of the hacienda. Style, Proto-Nazca.

F 1, 2, 3, 5, 6, 12, 17, 21, 22, 23, no comments.

F 4: 4.6 m. deep.

F 7: About 3.7 m. deep.

F 8: Superficial finds [apparently not definitely a grave].

F 9: About 2 m. deep.

F 10: About 3.5 m. deep.

F 11: Not very deep.

F 13: Grave formed by a big pot, by the side of which stood 4750–52.

F 14: 1.4 m. deep.

F 15: Grave in shape of big pot 1 m. below the surface.

F 16: Not very deep, the body decayed.

F 18: 2.8 m. deep.

F 19: 2.4 m. deep.

F 20: About 1.2 m. deep.

[Site G], Ocucaje. 300 m. northeast from the cemetery of the Epigones [Site E] is another cemetary showing remains of older or later Chincha periods

[Middle Ica II, Late Ica I]. Small excavations were made here, but many pottery fragments were strewn on the soil.

[Site H], Ocucaje. At the southern foot of the rock, site A, between it and the ruins near site D, there were discovered some intact grave chambers, one of them well built up of alternate layers of clay and of *chamico* straw (a kind of thistle growing at Ocucaje and much used in the construction of halls and platforms at the time of the Proto-Nazca style); two others built up of quarried stones. The manner of wall construction and certain objects (a small painted vessel, a frame of rods from a fan-like plume, etc.) leave no doubt that these grave chambers belonged to the Proto-Nazca period, even though the ruins just below are of the time of the later Chincha style [Late Ica I], and although no finely painted vessels of the Proto-Nazca style were found here [at site H.—This site is classed by the present authors as Proto-Nazcoid. It is the site of the "three cave burials" referred to by Dr. Uhle in his Davenport Academy report.[24]]

H 1: Chamber of a chief's grave.

H 2: Chamber of a woman's grave. Similar to the last but narrower and the walls of stone.

H 3: Grave chamber of a baby, built up of stones, roofed with wooden beams, 0.6 m. high, 0.6 m. wide, 0.8 m. long. The baby had been interred on its cradle, and apparently suspended from straw ropes. The skull was extremely fragile and may have been broken in packing [true]. With its woven bands still on it, it is of extreme interest because it shows, as has never before been observed, the exact manner in which the long deformed heads were produced during childhood. The long deformed heads common in the tombs of Bolivia are quite as typical of the race of the Proto-Nazca style.

H 4: Near these mummies a pot containing the remains of a mummy was found in the same soil without a chamber being distinctly observable, although the soil showed alternate layers of clay and *chamico* straw similar to the walls of chamber H 1.

Site M, Chulpaca.

Site S, Santiago.

S a: Acquired from Sr. Delgado, on whose property is a Proto-Nazca cemetery.

S b: At the bottom of an azequia, pieces washed from graves.

S c: Acquired in the hut of a neighbor of Delgado, from excavations in a huaca on the property of Lorenzini. Last Chincha period [Late Ica I or II].

S d: From the surface of another huaca on the hacienda of Sr. Olaechea. Older Chincha [Middle Ica].

S e1: Excavations on the hacienda Santiago of the Olaechea family, southwest of the main building [of the hacienda] at the foot of the southern hills. Proto-Nazca.

S e2: From the same spot: grave of older Chincha period [Middle Ica].

S e3: Excavations at the same spot as S e1.

S e4: From the same spot as S e1 and S e3 and from places in the plain about 70 m. and 200 m. distant, these latter having been only superficially settled and being recognizable by pottery, chipped stones, and adobe on the surface. No such remains were found elsewhere in the plain.

S f: Excavation of a cemetery of the same period as S e2, about a mile to the north.

Site T, on the road between Chulpaca and Tate. [See map, fig. 2.]

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[24] *Op. cit.*, p. 7.

T a: A large grave. When a grave post and the vessel 4877 were found, the soil below them was found to be loose, which indicated further graves deeper. . . . After my return from Lima, I resumed, with splendid results. . . . It was one of the most curious tombs and one of the richest in silver I ever opened, though many objects are partly decomposed. . . . This grave was about 5 m. deep and wide at the top.

T b: A small grave, only 1.2 m. deep, of a child of the better class. So contiguous to T a that it can be dated as surely from the same period, which is confirmed by the stylistic identity of the contents.

T c: Grave 4.6 m. deep, 1.5 m. long and broad at bottom, considerably less at top, like T a. Grave post 5008 lay 1.5 m. below the surface. Besides the large burial pot, there was only one pottery vessel and that little ornamented. There were two wooden implements beside the burial pot, uncarved and inferior to those in T a. Nevertheless the grave was the richest I ever opened, seven objects of gold in it aggregating a weight of 500 grams. Curiously enough, T a, so much richer in other contents, held only silver, though much of that. Besides the gold, there was so little in T c that it is difficult to decide its attribution to the end of the pre-Inca Chincha period (Late Ica I or II] or to the time when the Incas occupied Ica.

T d: Less important graves, near the surface [apparently near T c].

T d1, d2: About 2 m. deep.

T d3–6: Four shallow graves, each containing one object, the bodies being decayed.

T d7: Shallow grave of a child, near the preceding. Interment after the Spanish conquest, because with the mummy were beads of blue glass (5007).

T d8: The main grave chamber lay below the drifted sand, was 2.4 deep, 4.6 m. long from NNW to SSE, 2.95 m. wide. Apparently robbed anciently. . . . The bones, most of which are gone, seem to represent about a dozen individuals. The pottery lay mostly in the SE corner, lower than the bones of the principal individuals interred. . . . The grave was that of one of the leading persons in the valley during the Inca dominion.

T d9: The soil above T d8 contained mummies, which however represented not Inca but the original and older Chincha civilization [Middle Ica (?) or if 'older' in the sense of 'older than Inca,' then Late Ica]. There is no doubt that these mummies were buried after the burial of the individuals of high rank below them. The situation is simply that the indigenous Chincha civilization and imported Inca civilization were contemporaneous in the valley.

T d10: Another mummy near the upper surface of the high eastern border of the great tomb d [viz., T d8].

T d11: Another mummy.

T f: Southeast of T c. Grave 4–4.5 m. deep, not very wide. Found empty after three days of excavation.

T g: Grave, near T f, SSW [from T f or T c ?]. Previously excavated, although a ceiling of adobes was found at a depth varying from 2.2 m. on the west to 3 m. on the east.

T h1: About 30 m. southeast of T d. Intact, and the richest grave discovered. It is curious that no two of the rich graves opened in the past few weeks agree in kind of objects contained, although the style and type of civilization represented are uniform.

T h2: Upper layers of the grave [T h1] but below mummy 5122 [which represents the uppermost of three levels of burial at T h].

T i: Beyond T h to the southwest; 6 m. deep. . . . In the upper levels lay the burials T i1–4.

T i5: In the lower parts there were evidences of the grave having been used repeatedly, probably for members of one family. The main funeral pot generally found in graves of this character was replaced by three nested ones, but these had been overturned and most of the contents removed, so that they yielded only nos. 5330–5334. Other objects found in this grave [i.e., in the same chamber but not associated with the mummy in the triple pot] are nos. 5335–5367 and 5424–5428. These are peculiar not as to their time but as regards their eclectic nature. They were evidently in use simultaneously: objects of the indigenous civilization of the valley; objects of Inca art in the style of Cuzco; and objects of the common coast civilization of the time. In this grave there were principally objects of the common coast civilization—which are uncommon in Ica valley—mixed with a few objects in the style of Cuzco. A few pieces belonged to the indigenous art of the valley. It appears possible that some of the chiefs governing the valley under Inca dominion had been called in from northerly provinces, such as the coast from Cañete to Lima.

T i6: Separate, unimportant burial.

T k: South of T i. Nearly pure Inca civilization. Surprisingly shallow for the uncommonly good workmanship and importance of the contents. The oar-like implement, 2.2 m. long, had its top only 0.3 m. below the surface, making the grave only 2.5 m. deep.

T l: At the north corner of the gravefield, that is about 20 m. north of T b. Several additional mummies lay near the surface.

T m: Shallow grave, the mummy decayed.

T n: Southwest of T k. Promised to be deep, but went down only 2.5 m. and the mummy had been removed. The pottery was of Inca time and style of the valley [viz., Late Ica II contemporary with Inca].

Site X. Galagarza del Pueblo Nuevo, about 9 km. south of Ica.

Site Y. Also at Galagarza, about 100 m. from X, but on the property of Leandro Mendoza.

Site Z. Later excavations at Galagarza, 2 leagues below Ica. Older Chincha epoch [Middle Ica].

Z 1–3. Separate graves.

Z 4: Fine two-mouthed bottle with design of mythical monster in Proto-Nazca style. Otherwise the grave contents represent the ancient Chincha style [Middle Ica].

Z 5, 6: Separate graves.

APPENDIX C

ANCIENT CIVILIZATIONS OF ICA VALLEY

By Max Uhle[25]

I discovered at Ica five civilizations, three of which may be considered new.

1, an ancient civilization whose remains alone would have deserved a visit [Proto-Nazca].
2, fading epigones of the civilization of Tiahuanaco [Epigonal].
3, an older local civilization of Ica and adjacent valleys [Middle Ica].
4, a later local civilization of the same valley [Late Ica].
5, traces of Inca civilization.

The first civilization [Proto-Nazca] I shall discuss further below. I found it first at Ocucaje at three or four spots [sites A, B, D, F, H] but represented to very different extent, sometimes only one or two graves. There is no doubt that it will also be found higher up in the valley of Ica. This civilization seems to be of no great extent over Peru, though it is improbable that it is of purely local character. Among about three vessels of this kind in the Museum in Berlin, one bears the indication of being from Chala in the south of the Department of Ica. I am determined to follow the traces of this interesting civilization wherever I find it.

I found the second civilization [Epigonal] in two [*sic*] cemeteries close to each other at the foot of the dry slopes of the hills southwest of the cultivated part of the hacienda of Ocucaje [sites A(?), E], which I excavated for a week. I found it again, though I made no special excavations, at the upper end of the dry river basin of Oyujaya, which now contains only dry groves of algarroba trees, six leagues below Ocucaje.

This civilization is quite [*sic*] the same as the Epigonal which I found at Pachacamac in 1896, proving that it was a civilization of no local character, but general south Peruvian at a certain period.

[25] This appendix is the summary concluding a lengthy field letter dated at Ocucaje February 26, 1901. Stylistic changes have been made as in Dr. Uhle's report on Chincha valley published in this volume; additions by the authors are in square brackets; and the order of certain passages has been interchanged to conform with a renumbering of his cultures in chronological order. The manuscript proceeds from Epigonal to Inca and then leaps back to Proto-Nazca, perhaps for climactic effect.—This section is added, first, to convey the degree of agreement and diversity of conclusion between the authors and the explorer; and second, to avow and record his priority in most of the conclusions formulated.

The third civilization [Middle Ica] was best represented at Chulpaca [site M] near Galagarza. I found the same civilization at several spots at Ocucaje [sites C, G] and in a part of Oyujaya below, but not so well represented as at Chulpaca. It is a neat culture, exuberant in the development of its ornamentation. The technic and painting of its vessels are good, the style not elevated and somewhat geometrical. In the painting of the vessels can be discerned several traces of dependence on the style of Tiahuanaco. But the development from the Tiahuanaco style has been of quite another kind than that of civilization 2. The style of civilization 3 is local, that of 2 was general south Peruvian. This will explain how it was possible that the developments of their styles took quite different paths.

The fourth civilization [Late Ica] is only a development from the third. The ornamentation is less rich. That is to say, it impoverished a little, certain interesting types of vessels no longer occurring. The ornamentation differs in some details from that of pottery of the valley of Chincha, but the similarity is so strict in several respects that I do not hesitate to believe that the general civilization of the two valleys was the same in this period, and that the population of the valley of Ica in the last pre-Inca time probably consisted of Chinchas similar to the Chinchas of the valley of Chincha. The similarity extends also to certain implements, as, for instance, large shovels or spades of hard wood, probably used for work in the azequias. I found this civilization in every part of the valley of Ica [sites S, T, X; see also map, fig. 1], in all parts of the hacienda Ocucaje [sites C, D; see also map, fig. 3], at Oyujaya, at Monte Grande, and near the mouth of the river of Ica.

Inca remains [fifth civilization] are rare in this valley as far as I have knowledge.[26] I know of Inca plates excavated at Galagarza, I excavated an Inca bottle at Chulpaca now in the collection,[27] and I saw another that had been excavated near the river.

It must be observed that cemeteries of the syles 1, 2, 3, and 4 are nearly without exception quite separate. There is no doubt that their representatives were different populations from the others. It is possible that representatives of styles 2 and 3 (Epigonal and Middle Ica) lived simultaneously as neighbors in one valley. But in that case they were peoples of different nation, different origin, different

[26] Site T had not yet been excavated at this writing.

[27] Dr. Uhle's excavations at Galagarza (sites X, Y, Z) produced only Middle and Late Ica material (his periods 3 and 4). He evidently refers to Inca plates seen but not secured by him. The Inca jar or 'bottle' from Chulpaca has not been identified in his collection.

civilization and customs, and probably different language too, since their cemeteries are generally clearly separate. But if they were contemporaneous, this situation would be only the more interesting.

The shape of the graves is different in various periods.

Common types of the graves of civilization 1 are: square in the upper part and round below; or nearly round above and square below. The lower part is sometimes covered with poles and sometimes with broken, hard sedimentary stones.

The graves of period 2 are many times cut out in the white argillaceous sedimentary rock of the valley, sometimes as large parallelepipedons, sometimes as small ones.

The graves of periods 3 and 4 are generally parallelepipedal or room-like. There can often be observed roofs of reed supported on poles above the mummy, as if it were sitting in a hut.

The manner of preservation of the dead is different.

In period 2 the body was enveloped in much cotton and bound with ropes to form a big cylindrical bale. I am sorry that I could not preserve a bale of this kind.

In period 4 the bundles are less deformed. The dead appear to have been wrapped in leaves and a skin, or in cotton, and bound with ropes; but the bundle is of a different shape and size from that of period 2.

Skulls are often deformed. But the deformation in periods 2, 3, 4 made the skulls flat on the occiput, and broad, as was the general custom on the coast. The skulls of period 1 are quite different, being much elongated, some to an interesting degree. They rather resemble, therefore, the skulls of the mountaineers, as, for instance, in Bolivia. This indicates that civilization 1 is more different from 2, 3, 4 than these differ among themselves. On the other hand the similarity of the skulls with those of the Bolivian mountaineers does not prove that the people of civilization 1 came from there.

There is another important difference between the several civilizations in the manner of using adobes. The people of civilization 1 did not use square and parallelepipedal adobes, but only irregular balls of clay, in volume from about one to six fists, the shape sometimes more or less hemispherical. In other periods the use of square adobes was preferred.

The older geographical names in the valley of Ica and lower down on the river belong, so far as I can see, to at least two different languages. One of these is Quechua, the other older. I count among

geographical terms of Quechua provenience the following: Chirana, Huacachina, Chulpaca, Tinguina (?), Comatrana (?), Callanga (?). Among those of an older origin would be: Ica, Lujaraca, Tajaraca, Ocucaje, Oyujaya, Cachiche, Tate.

The style of the vessels of civilization 1 (little is met with besides objects of clay, probably in consequence of great antiquity) is quite exceptional. For the first, it is a *great* style. Everything shows a great conception. It is further quite different from other Peruvian styles (with the exception of the older style of Trujillo and Chimbote) in the skill and adroitness of the drawing, the liveliness of the attitudes of the represented figures. All this gives the impression of provenience from a foreign country rather than of south Peruvian origin. The painting is excellent. It may be that the technic and the colors used in painting show some similarity with the pottery of the style of Tiahuanaco. But this similarity would not appear to conclude the question of origin. The general difference, in liveliness and subjects represented, between the style of Tiahuanaco and style 1 of Ica being granted, it would still appear quite as possible that the style of Tiahuanaco was derived from this, as the reverse. It is true that the Tiahuanaco style is archaic, and the other has all the characteristics of a classical epoch, so far as classicity may be spoken of in American Indian styles. But it would be quite as possible that the influence of a classical style of foreign provenience roused an archaic style among a new nationality, as that the classical style was developed out of the archaic. At least, I do not see enough similarity for the latter conclusion.

One similarity cannot be overlooked, that is between style 1 of Ica and the ancient style of Chimbote and Trujillo in the objects represented. In both we have some preference for bird figures; in both we have long necked birds like herons represented similarly; in both we have above all myriapods with human heads and legs, wound around the vessel in a similar way. The University has a large plate of this kind in my collection from Trujillo, an excellent piece, found scattered through the soil in many pieces. In both we find lizards painted hanging in rows around the body of the vessel.

I compare these observations with the linguistic observations first made by the late Dr. Brinton, that it appears from small vocabularies that the language of Trujillo must have been spoken also in the territory of the Chinchas. And I must say that the similarity of these old styles with one another is much closer than any similarity that

might be construed between the art of the late Chimus and the later Chincha art.

But the similarity with the style of Trujillo, however real it is and however indicative of some original connection, does not exhaust the problem of the national character of style 1 of Ica. There is something in the latter which reminds one more of Mexico or Central America than of Peru. The general type of drawing seems to show more Central American character. Figures are sometimes full of significant details, as is not customary in styles of native Peruvian origin. There are pots with large ornaments *à la grec,* which remind one much more of the art of Mitla, in the shape of the pot, the type of the ornament, and the coloring, than of Peruvian art. I may call attention to the existence of an ancient tradition (as reproduced by J. J. von Tschudi) that immigrants from a Central American region (or thereabouts) came along the Peruvian coast and settled in Ica, following their way to Huaitara. And it is curious, too, though it seems accidental, that I have now in my possession small pieces of jadeite, a mineral common in Central America, but never yet found in Peru. However, this was discovered in a grave of period 3.

CATALOGUE NUMBERS OF SPECIMENS ILLUSTRATED[28]

Plate 25, Proto-Nazca: *a,* F6–4708; *b,* F10–4730; *c,* B5–4645; *d,* F11–4737; *e,* F4–4691; *f,* B4–4635; *g,* F11–4735; *h,* B5–4644.

Plate 26, Proto-Nazca: *a,* F11–4738; *b,* B5–4646; *c,* F2–4679; *d,* B4–4639; *e,* F7–4716; *f,* B5–4648; *g,* F19–4769; *h,* F6–4707; *i,* B4–4637; *j,* F19–4768.

Plate 27, Proto-Nazca: *a,* F13–4750; *b,* F3–4685; *c,* F22–4779; *d,* F21–4776; *e,* C b–4657; *f,* F23–4782; *g,* F11–4742; *h,* F3–4681; *i,* C b–4652; *j,* F7–4715; *k,* B4–4636; *l,* F17–4761; *m,* F21–4775; *n,* F9–4726; *o,* F18–4767; *p,* F7–4714; *q,* F12–4747; *r,* F12–4746; *s,* B2–4625; *t,* F17–4759; *u,* F4–4698; *v,* C b–4655; *w,* F18–4765; *x,* F9–4728.

Plate 28, Proto-Nazca: *a,* S e3–5498; *b,* F15–4755; *c,* F21–4774; *d,* S a–4894; *e,* F–3–4683; *f,* F10–4732; *g,* F4–4694; *h,* B3–4630; *i,* C b–4656; *j,* F2–4680; *k,* S e1–5483; *l,* S e1–5482; *m,* F1–4675; *n,* F20–4771; *o,* F3–4687; *p,* (near F6)–4711; *q,* F11–4741.

Plate 29, Proto-Nazca: *a* (Pan's pipe), B4–4642; *b,* B4–4641; Proto-Nazcoid: *c,* A–4490; *d,* A–4496; *e,* A–4495; *f,* A–4493; *g,* A–4789.

Plate 30, Epigonal (Early Ica): *a,* E5–4475; *b,* E10–4534; *c,* E1–4464; *d,* (E2–E4)–4471; *e,* E8–4484; *f,* E6–4479; *g,* (E2–E4)–4470; *h,* E13–4547; *i,* E15–4451; *j,* E14–4549; *k,* E5–4474; *l,* E12–4545; *m,* E6–4478; *n,* E15–4555; *o,* E12–4544; *p,* E5–4477; *q,* E6–4480.

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[28] The museum numbers of specimens actually all bear the prefix 4–, but this has been replaced, throughout the present paper, by a prefix indicating the site (capital letter) and grave (number or small letter). Thus F6–4708 instead of 4–4708.

Plate 31, Middle Ica: I: *a*, C3–4598; *b*, C2–4595; *c*, C5–4603a; *d*, C2–4594; *e*, C3–4600; *f*, C3–4597; *g*, C2–4592.

Plate 32, Middle Ica II: *a*, M–4302; *b*, M–4343; *c*, M–4303; *d*, M–4304; *e*, C1–4571; *f*, M–4341; *g*, M–4329; *h*, M–4291; *i*, C1–4575; *j*, M–4292.

Plate 33, Middle Ica II: *a*, M–4285; *b*, M–4312; *c*, M–4299; *d*, M–4348; *e*, M–4347; *f*, S f–5494; *g*, M–4283.

Plate 34, Middle Ica II: *a*, M–4569; *b*, C1–4284; *c*, S e2–4897; *d*, C1–4568; *e*, S e2–4898.

Plate 35, Middle Ica II: *a*, Z2–4836; *b*, C1–4581; *c*, M–4333; *d*, C1–4578; *e*, M–4305; *f*, M–4296; *g*, M–4286; *h*, M–4314; *i*, Z4–4847; *j*, M–4344; *k*, M–4461; *l*, M–4316; *m*, C1–4584; *n*, C1–4574; *o*, M–4289; *p*, C10–4609; *q*, C10–4613; *r*, C10–4611; *s*, C10–4612.

Plate 36, Late Ica I: *a*, T i1–5281; *b*, T i1–5293; *c*, T h1–5168; *d*, T h1–5179; *e*, T i1–5290; *f*, T i3–5302; *g*, T h1–5178; *h*, T i–5470; *i*, T h1–5205; *j*, T h1–5194; *k*, T h1–5196; *l*, S c–4900; *m*, T h1–5154; *n*, T h1–5141; *o*, T h1–5142; *p*, T i1–5279; *q*, T f–5114; *r*, T h2–5123.

Plate 37, Late Ica I: *a*, T i1–5286; *b*, T h1–5164; *c*, T i1–5290; *d*, T h1–5151; *e*, T i1–5283; *f*, T h1–5170; *g*, T h1–5160; *h*, T h1–5162; *i*, T i1–5182; *j*, T f–5100; *k*, T h1–5213; *l*, T h1–5165.

Plate 38, Late Ica II: *a*, T a–4959; *b*, T a–4957; *c*, T a–4960; *d*, T n–5450; *e*, T n–5451; *f*, T n–5449; *g*, T d10–5079; *h*, T a–4961; *i*, T d10–5083; *j*, T a–4965.

Plate 39, Inca: *a*, T a8–5025; *b*, T k–5394; *c*, T i5–5338; *d*, T k–5369; *e*, T d8–5027; *f*, T k–5386; *g*, T d8–5019.

Plate 40, Inca: *a*, T i–5424 (probably Inca); *b*, T k–5399; *c*, T d8–5035; *d*, T d8–5041; *e*, T d8–5033; *f*, T d1–4997; *g*, T k–5370; *h*, T k–5392; *i*, T d8–5027; *j*, T d8–5021; *k*, T l–5439; *l*, T d8–5028; *m*, T k–5387; *n*, T d–5306 (probably Inca).

Text figure 4, Proto-Nazca: B2–4625.

Text figure 5, Proto-Nazca: S a–4894.

Text figure 6, Epigonal: E2–3–4–4471.

Text figure 7, Epigonal: E12–4544.

Text figure 8, Epigonal: E14–4549.

Text figure 9, Epigonal: E1–4464.

Text figure 10, Epigonal: E5–4474.

Text figure 11, Epigonal: E11–4538.

Text figure 12, Middle Ica I: C2–4592.

Text figure 13, Middle Ica II: C1–4578.

Text figure 14, Middle Ica II: M–4333.

Text figure 15, Middle Ica II: M–4303.

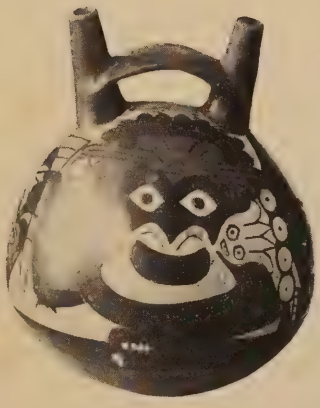
Text figure 16, Middle Ica II: M–4302.

Text figure 17, Inca: from left to right, top, T d8–5061, T d1–4998, T k–5388, T i5–5342; bottom, T k–5379, T k–5372, T i5–5340.

a

b

c



d

e

f

g

h

PROTO-NAZCA

a

b

c

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e

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g

h

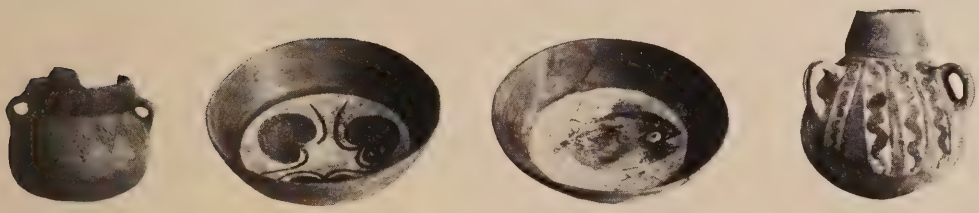
i

j

PROTO-NAZCA

PROTO-NAZCA

a *b* *c* *d* *e*



f *g* *h* *i*

j *k* *l* *m* *n*

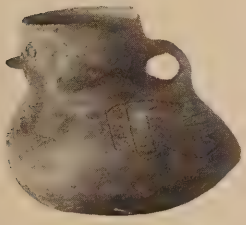
o *p* *q*

PROTO-NAZCA

a

b

c



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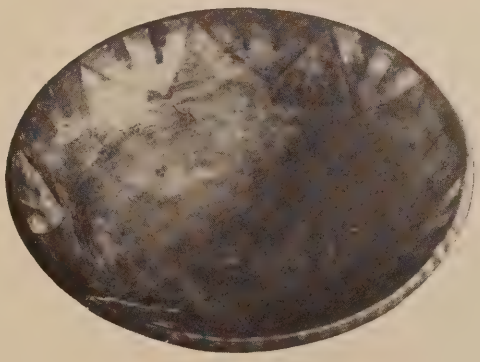

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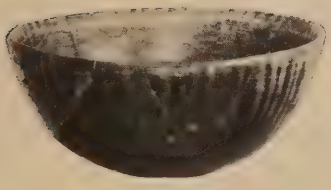

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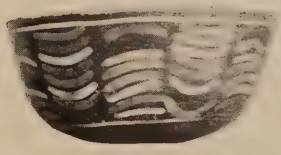


g

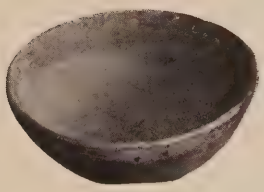
PROTO-NAZCA (*a–b*) AND PROTO-NAZCOID (*c–g*)

a *b* *c* *d* *e* *f* *g* *h* *i* *j* *k* *l* *m* *n* *o* *p* *q*

EARLY ICA (EPIGONAL)

a

b



c

d

e

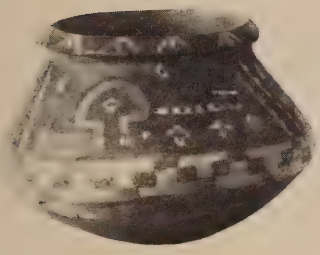
f

g

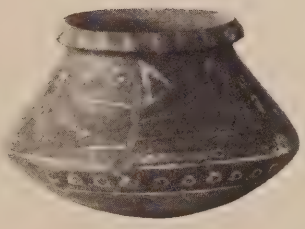
MIDDLE ICA I

a

b



c



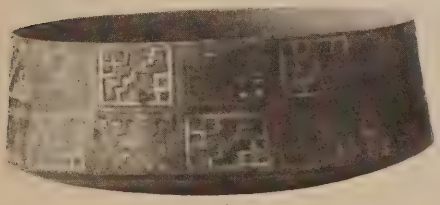
d

e

f

g

h



i

j

MIDDLE ICA II

a

b

c

c

d

f

g

MIDDLE ICA II

a *b* *c* *d* *e*

MIDDLE ICA II

a *b* *c* *d* *e* *f* *g*

h *i* *j* *k* *l*

m *n* *o* *p* *q* *r* *s*

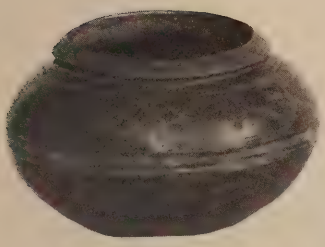
MIDDLE ICA II

a *b* *c* *d* *e* *f*

g *h* *i* *j* *k* *l*

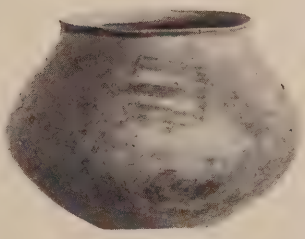
m *n* *o* *p* *q* *r*

LATE ICA 1



a

b



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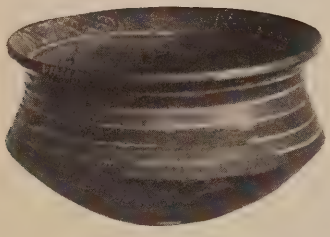

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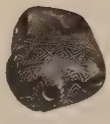

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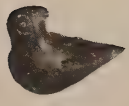
k



l

LATE ICA I

a *b* *c*

d *e* *f*

g *h* *i* *j*

LATE ICA II

a

b

c

d

e

f

g

INCA

a *b* *c* *d*

e *f* *g* *h*

i *j* *k*

l *m* *n*

INCA

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